

LSU Dual Enrollment Program for Math

Precalculus COURSE PROFILE 1-15-2025

ETEXT: *Calculus for Business, Economics, Life, and Social Sciences, 14e Digital Update, MyLab Math*, Barnett, Ziegler, Byleen

HIGH SCHOOL COURSE CODE: 160348

Units-

1 – Basic Review

2 – Equations

3 – Functions

The number in parentheses indicates the number of homework exercises on that topic in MyLab Math.

Unit 1: Basic Review

Homework: Basic Number Concepts (18)

Multiply and divide fractions

Add and subtract fractions

Simplify using order of operations

Graph inequalities on number lines and write them as intervals

Homework : Exponents and Radicals (19)

Use properties of exponents

Simplify radicals

Use radicals and rational exponents

Unit 2: Equations

Homework: Linear Equations (25)

Solve linear equations

Write linear equations

Graph linear equations

Solve systems of linear equations in two variables

Homework : Quadratic Equations (18)

Factor trinomials

Solve quadratic equations using the square root property

Solve quadratic equations by factoring

Solve quadratic equations using the quadratic formula

Homework: Other Types of Equations (14)

Solve equations with variable(s) in the denominator

Solve equations with radical

Solve equations of quadratic type

Unit 3: Functions

Homework: Functions: Domain, Range, and Evaluation (29)

Determine whether sets, mappings, or tables define a function

Determine whether a graph defines a function

Find the domain and range of functions

Find function values from a graph

Evaluate functions

Find the average rate of change of a function, and graph the associated secant line

Find the difference quotient of a function

Homework: Functions: Properties of Functions (22)

Find the domain of a function

Determine whether an equation defines a function and, if so, find the domain

Find the value of a function

Identify the graph of a function

Use a graph to find where a function is increasing, decreasing, or constant

Use a graph to find if a function is even or odd

Use a graph to locate local maxima and local minima

Find local maxima and minimum

Determine where a function is increasing or decreasing

Find the average rate of change of a function

Homework: Graphs of Basic Functions and Polynomials (21)

Find the equation of lowest degree that has a given graph and intercepts

Analyze graphs of basic functions

Graph piecewise-defined functions

Graph and analyze quadratic functions

Sketch and analyze the graphs of polynomial functions

Describe the end behavior of the graph of a polynomial function

Factor polynomial functions and sketch their graphs

Find a polynomial function with real coefficients which satisfies given conditions

Homework: Functions: Transformations and Compositions (23)

Graph functions using transformations

Find composite functions

Find the domain of composite functions

Decompose functions

Homework: Rational Expressions (21)

Divide rational expressions using long division

Simplify rational expressions

Add and subtract rational expressions

Simplify complex rational expressions

Rationalize numerators and denominators

Homework: Rational Functions (20)

Simplify complex rational expressions

Solve rational equations

Find equations of asymptotes and graph rational functions
Sketch graphs of rational functions and estimate function values

Homework: Exponential Functions (19)

Graph exponential functions
Graph exponential functions using transformations
Use compound interest formulas
Write an exponential function for a given graph
Solve applications involving exponential functions

Homework: Logarithmic Functions (36)

Evaluate logarithms using properties of logarithms
Evaluate logarithms using technology
Apply laws of logarithms to express as a sum, difference, and/or product
Apply laws of logarithms to express as a single logarithm
Solve exponential equations
Solve logarithmic equations

Homework: Common Algebra Applications in Calculus (16)

Solve perimeter, area, and volume problems
Solve percent increase and percent decrease problems
Solve simple interest problems
Model exponential growth and decay